

APPENDIX A. LITERATURE REVIEW SUPPORT

Table A.1: Comparison Previous Contributions with the Current Research in Service Failure and Recovery Domain.

Authors (year)	Research Focus	Types of Consumers' Negative Emotions	Consider Negative Emotions from a Time-Frame Perspective	Examine Consumers' Coping Mechanisms	Examine Firms' Responses or Recovery Strategies	Develop a Gen-AI Application (APP) in Paper
Borah et al. (2020)	Leveraging service recovery strategies to reduce customer churn in emerging markets.	Consumers may experience negative emotions such as dissatisfaction, frustration, anger, and disappointment when they encounter service failures	n/a	n/a	Firms in emerging markets need to align their service recovery strategies with different types of service failures to reduce customer churn.	n/a
Chen et al. (2023)	Investigating service recovery strategies during extended service shutdowns caused by exogenous events	n/a	n/a	Consumers weigh cash refunds against future service vouchers, with preference trends and regulatory support often leaning towards guaranteed cash options.	Service recovery strategies include cash-back or vouchers, with hybrids offering customer choice, but regulatory and market factors can affect provider decisions.	n/a
Choi et al. (2021)	Examining consumer reactions to service failures and recovery efforts by humanoid and nonhumanoid service robots.	Dissatisfaction, Frustration, Disappointment	n/a	n/a	Humanoid robots should use sincere apologies and explanations to enhance satisfaction, while human-robot collaboration is key for warmth and empathy in service recovery.	n/a
Deng & Chau (2021)	Investigating how expressions of anger and sadness in online news affect readers' perceptions of news believability and subsequent social media behaviors	Anger, which decreases news believability, and sadness, which does not affect it	n/a	n/a	n/a	n/a
Goode et al. (2017)	The effectiveness of customer compensation as a recovery action following the 2011 Sony PlayStation Network data breach, specifically examining its impact on service quality, continuance intention, and repurchase intention among affected users	Disappointment: if customers expect significant compensation (e.g., a product replacement) but receive something much less (e.g., a small cash incentive), they may experience disappointment and negative evaluations	n/a	n/a	Firms typically respond to data breaches by apologizing and providing detailed information about the incident while considering compensation as a key recovery strategy.	n/a
Grégoire &	Expand beyond the static	Anger, Frustration,	n/a	Customers seek	Developing varied recovery	n/a

Mattila (2021)	“customer-firm” dyad to include multiple entities like employees and observers	Disappointment, Regret, Sadness, Anxiety, Helplessness		compensation, share grievances, rely on social support, or use self-help techniques like mindfulness to handle service dissatisfaction.	types, determining optimal compensation, and sincere apologies are key, alongside using analytics and considering observers to refine long-term recovery strategies.	
Herhausen et al. (2019)	Detecting, preventing, and mitigating online firestorms in brand communities.	The paper discusses the impact of high-arousal and low-arousal emotions on the potential for online firestorms	n/a	n/a	The study highlights the relative effectiveness of different firm response approaches, such as offering an apology, suggesting a channel change, providing empathic or explanatory responses, and offering compensation	n/a
Herhausen et al. (2023)	What are the strategies to de-escalate negative, high-arousal emotions in text-based social media complaints?	High-arousal emotions such as anger are prevalent in consumer complaints on social media	n/a	n/a	Active listening and empathy as effective strategies to mitigate negative arousal in social media complaints.	n/a
Khamitov et al. (2020)	Brand transgression (BT), service failure and recovery (SFR), and product-harm crisis (PHC) in the field of marketing.	Anger, disappointment, frustration, betrayal, and distrust.	n/a	Consumers manage marketplace setbacks by seeking social support, reinterpreting events positively, actively resolving issues, managing emotions, or sometimes seeking revenge against the brand.	Firms must develop effective strategies to address and recover from negative events. One strategy is promptly acknowledging and taking responsibility for the negative event, demonstrating transparency and accountability.	n/a
Liu et al. (2024)	Exploration of relationships among keywords in SFR research using text mining, co-word analysis, and social network analysis (SNA).	Anger, Disappointment, Frustration, Revenge	n/a	Customer participation in service recovery and empathetic apologies from providers aid in coping with service failures, influenced by the emotional intelligence of service employees.	Custom recovery strategies with customer input, categorized into apologies, compensation, and engagement, affect outcomes across customer, employee, and firm levels.	n/a
Qiao et al. (2024)	The effects of firm-generated content (FGC) on sales in online healthcare platforms, specifically examining the mediating role of user-generated content (UGC) characteristics such as length,	n/a	n/a	n/a	It focuses on the impact of firm-generated content (FGC) on sales and the mediating role of user-generated content (UGC) characteristics in online	n/a

	affective, cognitive, and social aspects while also considering contextual factors that may influence these relationships				healthcare platforms.	
Ravichandran & Deng (2023)	Examines how rational and emotional cues in managerial responses to negative online reviews affect future review valence and complaint behavior, using text analysis of TripAdvisor data to develop response strategies for customer complaints.	This research focuses on types of complaints (procedural unfairness, interactional unfairness, distributive unfairness) rather than specific negative emotions.	n/a	n/a	Firms should calibrate their response strategies between rational cues (explanations, solutions) and emotional cues (apologies, empathy) based on different types of customer complaints.	n/a
Sun et al. (2021)	How active service interventions on social media influence customer complaints, revealing that increased complaints are driven by service awareness rather than chronic complaining behavior	n/a	n/a	n/a	The paper emphasizes that firms should focus on how they respond to customer complaints on social media, as proactive service interventions can increase complaints due to heightened awareness but can also reduce future complaints when service quality is high	n/a
Van Vaerenbergh et al. (2019)	Conceptualizing the service recovery journey (SRJ) with phases: pre-recovery, recovery, and post-recovery	Anger, upset, and annoyance when customers find the resolution unsatisfactory or face a double deviation. Rage, typically occurring after a failed recovery attempt	n/a	Customers minimize service failure severity by comparison, seek validation for improvements, and may desire involvement in recovery or resort to revenge if issues recur.	Proactive communication, empowered resolutions, appropriate compensation, and follow-ups with customer involvement build trust and mitigate dissatisfaction.	n/a
Yin et al. (2014)	The research focuses on the effects of discrete emotions, specifically anxiety and anger, embedded in seller reviews on their perceived helpfulness to readers	The paper identifies two negative emotions: anxiety, which relates to concerns about potential harm and uncertainty, and anger, which arises from perceived personal harm due to others' actions	n/a	n/a	n/a. The paper does not explicitly examine a firm's response strategy to negative reviews. However, it implies the importance of understanding emotional content in reviews, which can inform how firms respond.	n/a
Yin et al. (2021)	How expressions of anger in consumer reviews affect perceptions of review helpfulness and influence consumer attitudes and purchase decisions, challenging the	The paper discusses consumers' negative emotions, particularly anger	n/a	n/a	n/a	n/a

	assumption that more helpful reviews are always more persuasive					
You et al. (2020)	Different recovery strategies, specifically apology and appreciation, effectively redress service failures and restore customer satisfaction.	n/a	n/a	While the paper does not discuss coping mechanisms, it provides insights into the role of self-esteem and linguistic framing in the recovery process.	The paper suggests that appreciation, in addition to apology, can be an effective response strategy for service providers.	n/a
Our research	Create a research-driven app for service providers to navigate service failure-recovery dynamics	Identify anger, frustration, disappointment, helplessness, anxiety, positioning as a negative emotion continuum from a time-frame perspective	Yes	Confrontative coping, support-seeking coping, gap-fulfilling coping	Tailored responsive strategies toward consumers' specific emotions and underlying coping mechanisms	Yes. This current research develops an app based on the research results for managerial application

Note 1: Our research addresses three key gaps in service failure-recovery literature: First, there is a lack of a holistic, integrative theoretical perspective that considers the various types of consumers' negative emotions in service failure situations. (To address this gap, our paper adopts a time-frame perspective that integrates these emotions by examining them from retrospective, prospective, and retro-prospective viewpoints). Second, previous studies have offered limited integration of consumer coping mechanisms with corresponding firm response strategies. Third, practical applications, specifically GAI tools, are absent, and these theoretical insights are not translated into actionable strategies. By developing an emotion-based GAI tool, our study bridges the marketing-IS interface and seeks to answer the question: "How can GAI-driven tools help firms develop recovery strategies by incorporating consumer negative emotions and corresponding coping mechanisms?"

APPENDIX B. TRIGGERING CONSUMERS' NEGATIVE EMOTIONS USING FIVE FAILURE STORIES

B.1 Trigger anger emotion

You and your friend see a great deal where you can get a discount on a new phone by trading in your old one. The promise is that a new phone will be sent out to you upon receipt of the old one. Your phone is in good shape, so you think you'll get a good discount.

Your friend gets their new phone and the discount with no problems. But your new phone never comes. You're really angry and call customer service to complain. The customer service representative first says that your old phone got "lost" and because of that, you can't get any discount. Then they say that your phone was damaged upon arrival, which you know isn't true. Your friend traded in a phone that was even older than yours and nowhere near as good, but they still got the deal. You have to pay full price and you are without a phone. No matter how much you argue, the company won't change its stance. They say it's not their fault and blame the delivery company. You are very angry.

Even though your old phone was just like your friend's, the company says they can't do anything to help you. You don't get any discount or credit, and you have lost out on a new phone because of alleged problems with shipping and the old phone's condition. Nobody can give you a reasonable explanation of how this has happened, which makes you even more angry.

You demand that somebody fixes this problem, but the company just recommends that you talk to the delivery company's lawyers about your problem.

B.2 Trigger frustration emotion

It is necessary to replace the outdated desktop computer at work because a crucial project requires demanding design software that the old workstation can't properly handle. During an online Black Friday sale, you identify and purchase a state-of-the-art workstation that has great multitasking capabilities. Its specs are excellent, and it should really improve rendering times. Delivery is promised within five business days, which aligns with the start of your project.

Unfortunately, the expected delivery date comes and goes without any sign of the new workstation. After reviewing the shipping details, you find that a strike at the distribution center has caused an unexpected delay. The strike is beyond the retailer's control.

As the strike persists, it starts to impact your work. Each day, the same update appears: "Shipment Delayed." The retailer explains that they have been unable to bypass the logistics impasse due to constraints beyond their control.

Meanwhile, you are constantly being reminded of the limitations of the old desktop computer. Slow startup times, sluggish performance, and frequent crashes are consistently hindering your productivity. The disparity between the potential for seamless workflow promised by the new computer and the delays you are now experiencing has grown, resulting in an increasing sense of frustration.

Every screen freeze and hourglass icon feels like a direct hindrance to your productivity. The outdated equipment continues to interfere with your work.

B.3 Trigger disappointment emotion

You have been looking forward to dining at a highly-rated restaurant that has recently opened in your area. It's been the talk of the town for its exceptional menus and has been booked solid for weeks. You've finally managed to secure a reservation for a special occasion: your wedding anniversary. The anticipation has been building as you've heard rave reviews about the culinary experience that awaits.

The evening arrives, and you are greeted warmly upon entry. The ambiance is as enchanting as you expected, the decor exquisite, the lighting perfect. You and your partner are seated at a prime table, and the evening begins promisingly with a complimentary glass of champagne.

You peruse the menu and settle on the restaurant's signature dishes. These have been the talk of social media and also come highly recommended by your friends. However, as the courses start to arrive, you notice that the presentation of the dishes doesn't quite match the stunning photos you've seen online. Trying to remain optimistic, you take your first bite only to find that the flavors are lackluster and don't live up to the hype. The "melt-in-your-mouth" steak is tougher than anticipated, and the "explosion of flavors" in the accompanying sauce is more of a whisper.

With each course, it becomes increasingly clear that your dining experience is not aligning with the high expectations set by the reviews and the restaurant's reputation. The service, while polite, is slow and inattentive, compounding the sense of letdown. You find yourself disinclined to order dessert or coffee.

B.4 Trigger helplessness emotion

You have carefully packed up all of your belongings after a year of living in the dorm as an international student. The day has arrived for you to move out, but the moving company

you hired weeks ago has not shown up at the scheduled time. You have tried calling them over and over, but no one ever picks up. Your calls are going straight to an automated message saying that they are unable to take your call right now and to try again later.

In a panic, you plead with the dorm administration to let you stay for another night, but they tell you that this is not possible as all rooms must be cleared for summer maintenance. You point out you have nowhere to go and no way of moving your things, but they coldly state that your problem is not their responsibility.

You wait outside the dorm with all your possessions, repeatedly trying the moving company's number in vain. Again and again, you get the same unhelpful automated reply. Hours go by as you watch other students happily move out around you. The sun starts to set, and you begin to desperately look around and ask passersby for help, but people just give you blank stares and continue.

As darkness falls, you sit alone on the curb, surrounded by your bags and boxes. No one answers your calls. No one stops to help. The dorm is now closed behind you. You have nowhere to go. An overwhelming sense of helplessness washes over you. You feel entirely powerless, lost, and alone.

B.5 Trigger anxiety emotion

You're busy at work when you get a text from your bank. It says that someone has just spent \$2000 using your credit card at a store you don't know. You quickly check your bag and see your card is still there. You feel really nervous and try to log into your bank app on your phone, but you keep making mistakes because you're so worried.

When you finally get into the app, you see more charges are being made at different stores. Clearly, someone has obtained your card number. Feeling very scared, you call the bank and choose the "representative" option to talk to a person. You are put on hold. The bland hold music does not make you feel any better.

You wonder who took your card number and how they got it. You're scared that while you are on hold, they might take all your money. Your mind is full of these scary thoughts as you wait. You feel very anxious and can't sit still while you wait for someone to pick up the call and help you.

B.6 First manipulation checking question

Please rate the following level of your emotion listed as follows

Note: 1 means not at all, 7 means strongly

	1	2	3	4	5	6	7
Anger							
Frustration							
Disappointments							
Helplessness							
Anxiety							

B.7 Second manipulation checking question:

After reading this situation, please select the "One" Major Emotion that was first immediately triggered in you.

Anger	Frustration	Disappointment	Helplessness	Anxiety

APPENDIX C: EMPIRICAL DESIGN -FIRMS' RECOVERY SITUATION

C.1 Anger Situation

C.1.1 Group 1: control group (no active listening, no explanation)	<p>Now you are calling the customer service of this company...</p> <ul style="list-style-type: none"> • You: Hi, I'm calling about my order for the new smartphone. It was supposed to be delivered last week, but I've received nothing. There's also a message saying my order is on hold. Can you tell me what's happening?" • Customer support: Please hold while I check the details of your order. • (After a pause where only hold music plays) • Customer support: I see that your order is on hold. We are currently reviewing the status of your trade-in device. We cannot provide any additional information at this time. • You: But I sent my phone in perfect condition, and I haven't heard anything back. Can you tell me why it was put on hold and when I can expect my new phone? • Customer support: We are unable to provide specific reasons for individual cases as they are being reviewed. Our process requires time, and we ask for your patience. You will be contacted once we have an update. Is there anything else I can assist you with today? • You: This is really XXXXX. I sent my phone in good faith, and now I have no phone at all. I need to know what's going on. Can't you give me more information? • Customer support: I understand that you're looking for answers, but I cannot provide any more details at this moment. We recommend you wait for our follow-up communication. Thank you for your patience.
C.1.2 Group 2: active listening only interaction	<p>Now you are calling the customer service of this company...</p> <ul style="list-style-type: none"> • You: Hi, I'm calling about my order for the new smartphone. It was supposed to be delivered last week, but I've received nothing. There's also a message saying my order is on hold. Can you tell me what's happening?" • Customer Service: Good day, I'm here to help. It sounds like you're facing an unexpected delay with your smartphone delivery, and you've noticed the status is "On Hold." That must be quite concerning, especially since you're without your traded-in phone now. Let's see what we can do about this. • You: Yes, I've been waiting for my new smartphone to arrive. The delivery is late, and now my order status says it's 'On Hold.' I've sent my old phone in as a trade-in, and everything was fine with it. I don't understand the problem. • Customer Service: What I'm hearing is that there's a lot of uncertainty around your order, particularly since you've fulfilled your part of the trade-in agreement. You were expecting your new phone by now, and instead, you're left with questions and no clear answers. • You: Exactly! I was really looking forward to the new phone. I've followed every instruction provided and now I'm stuck without any phone at all. • Customer Service: You've anticipated this upgrade, and it's not just the wait but the lack of communication that's frustrating you. I want to acknowledge that your situation is important, and we need to address your concerns promptly. • Customer Service: Although I don't have immediate access to the details of the trade-in assessment, what I can do is prioritize your case. I will make sure it's reviewed urgently by our resolutions team, and I will personally ensure that you receive a call with an update before the end of the day. Your situation warrants our attention, and I'm here to make sure we're moving forward to resolve this. • You: I appreciate that. I just want some clear information on when I can get my phone or at least understand what's going on. • Customer Service: I understand that clarity is what you're seeking right now, and you have every right to it. Rest assured, I'm on this and you will hear from us very soon. Is there anything else you'd like to address while you have me on the line?
C.1.3 Group 3: retrospective	<p>Now you are calling the customer service of this company...</p> <ul style="list-style-type: none"> • You: Hi, I'm calling about my order for the new smartphone. It was supposed to be delivered last week, but I've received nothing. There's also a message saying my order is on hold. Can you tell me what's happening?"

explanation only interaction	<ul style="list-style-type: none"> Customer Service: Hello, thank you for calling the customer service center. I see that your order is on hold. Let me explain the situation to you. The reason your order was placed on hold relates to a standard quality check, which flagged a discrepancy with the trade-in device. This precaution ensures every customer receives a product that meets our high standards. You: But my phone was in perfect working order. I don't see why it was flagged. Customer Service: I can see why this is confusing and why you would be upset, given the condition you sent your device in. The manual review that follows such flags is part of our commitment to uphold these standards for all customers. It's a thorough process that, unfortunately, does take a little time to ensure accuracy and fairness. You: This is really unacceptable. I was expecting my new phone, and now I'm left with nothing. Customer Service: I understand that this is an upsetting situation for you, and it's certainly not the experience we want any customer to have. The review is carried out with the utmost care to validate the initial findings, and we are committed to communicating the outcome to you as promptly as possible. You: So, what am I supposed to do in the meantime? Customer Service: At this stage, the review process must be completed before we can move forward. We understand that this is a significant inconvenience, and we want to resolve this situation quickly for you. You will be informed of updates as soon as they are available. We appreciate your patience in this matter.
C.1.4 Group 4: active listening + retrospective explanation interaction	<p>Now you are calling the customer service of this company...</p> <ul style="list-style-type: none"> You: Hi, I'm calling about my order for the new smartphone. It was supposed to be delivered last week, but I've received nothing. There's also a message saying my order is on hold. Can you tell me what's happening? Customer Service: Thank you for calling our customer service center. I'm here to assist you. I understand you're calling about a delay in the delivery of your new smartphone. Can you share more details with me about your order status? You: Hi, yes. My new smartphone was supposed to be delivered last week, but nothing has arrived. I checked online, and it says my order is "On Hold." I've already sent in my old phone for the trade-in, and everything was fine with it. I'm at a loss here. Customer Service: I can hear how important this issue is to you, and I want to assure you that I'm here to get to the bottom of this. You're expecting your new phone, and instead, you're left without any phone and without clear answers. Let me explain what has happened so far. The CS pauses to make sure you are ready to listen. Customer Service: Your order was flagged during our standard quality check, which is a measure we take to ensure the excellence of our products for every customer. Although you sent us your device in good faith, our system detected what seemed to be a discrepancy with the trade-in device. This automatically puts the order on hold. I realize this is not only confusing but also very concerning, especially since you've been waiting for your new phone. You: I understand that there are processes, but my phone was perfectly fine. I need it resolved. Customer Service: Absolutely, and your concern is valid. What I'm going to do is prioritize your case with our resolutions team to have your trade-in re-evaluated urgently. While I don't have direct control over the assessments, I will ensure you're kept in the loop with clear communication. You will get an update from us by the end of the day. You: Thank you. I just need some transparency and to know when I'll get my phone. Customer Service: Transparency is key, and you deserve to know what's happening every step of the way. I'm personally going to monitor your case and make sure we get back to you with not just an update but a resolution. We're committed to making this right. Is there anything else you'd like to discuss?
C.2 Frustration Situation	
C.2.1 Group 1: control group	<p>Now you are calling the customer service of this company...</p> <ul style="list-style-type: none"> You dial the customer service number, and after navigating a series of automated responses, you finally reach a representative.

<p>no empathy, no retrospective explanation</p>	<ul style="list-style-type: none"> • Customer Service: Thank you for calling Customer Support. How may I assist you today? • You: Hello, I'm calling to inquire about the workstation I ordered. It was supposed to arrive within five business days, but I've not received it yet. The tracker shows it's delayed. Can I get an update on what's happening? • Customer Service: Please hold while I check the details of your order. • A brief pause while they review your order. • Customer Service: Our records show that your order is currently delayed. We are unable to provide further details at this time. • You: I need this workstation for an urgent project. Can you tell me when I can expect the delivery? • Customer Service: We do not have that information. We recommend you continue to monitor the tracking for updates. • You: Is there a way to expedite the delivery? This is quite urgent for me. • Customer Service: All deliveries are currently on hold due to a strike at the distribution center. We cannot expedite delivery at this time. • You: This is quite frustrating. Is there any additional support you can provide or any more information about when the strike might be resolved? • Customer Service: We suggest you wait for the situation to be resolved. The strike is beyond our control. Thank you.
<p>C.2.2 Group 2: empathy only</p>	<p>Now you are calling the customer service of this company...</p> <ul style="list-style-type: none"> • Customer Service: Good morning; thank you for contacting our Customer Support Center. How can I help you today? • You: Hello, I ordered a workstation for an important project that was supposed to be delivered last week, but it hasn't arrived. The online status shows a delay. Can you provide more information about the situation? • Customer Service: I understand your concern, especially with an important project at stake. Let me check your order, and we'll review it together. • A brief pause while they review your order. • Customer Service: Your delivery has been affected by the strike at our distribution center. It's unfortunate that external events have caused a delay in your plans, considering the importance of this equipment for your work. • You: It's a difficult situation. I was counting on that workstation for my project. Do you have any estimate for when it might be delivered? • Customer Service: I can imagine how challenging it is to not have the necessary tools for your project. Unfortunately, due to the strike, I can't provide a specific delivery date at the moment. However, I want to assure you that we are working to get your order to you as soon as possible under the circumstances. • You: I understand it's beyond your control, but it's still a tough situation for me. • Customer Service: Absolutely, I understand your position. Situations like these are challenging, and I can understand the stress it brings to your work. We appreciate your patience and trust, and we are committed to keeping you informed.
<p>C.2.3 Group 3: retrospective explanation only</p>	<p>Now you are calling the customer service of this company...</p> <ul style="list-style-type: none"> • Customer Service: Good morning; thank you for calling our Customer Support line. How can I help you today? • You: Hi, I need to know about the status of the workstation I ordered. It was supposed to arrive last week, but I haven't received it yet. The tracking information just says "delayed." Can you tell me what's going on? • Customer Service: Sure, let me check your order details. One moment, please. • A pause while they look up your information. • Customer Service: I have your order in front of me. The delay is due to an unexpected strike at our main distribution center, which has disrupted our delivery schedules. The strike resulted from negotiations between the distribution center's management and its employees, which unfortunately were not successful. • You: So, what does that mean for my delivery? I have a project waiting for this workstation. • Customer Service: The strike has caused a backlog of deliveries, including yours. Usually, such strikes are resolved within a certain

	<p>timeframe, but it's difficult to provide an exact end date. Once the strike is resolved, we have plans in place to expedite the delayed shipments as quickly as possible.</p> <ul style="list-style-type: none"> • You: This is putting me in a really tough spot. I had planned my timelines based on the expected delivery date. • Customer Service: We understand that this has inconvenienced you, especially regarding work commitments. As soon as the strike ends and we can access our distribution center, your order will be prioritized for dispatch. We are monitoring the situation constantly and will update your order status accordingly.
C.2.4 Group 4: empathy + retrospective explanation	<p>Now you are contacting the customer service of this company...</p> <ul style="list-style-type: none"> • Customer Service: Good morning; thank you for reaching out to our Customer Support Center. How can I help you today? • You: Hello, I'm inquiring about the workstation I ordered for an important project. It was supposed to arrive last week, but it hasn't shown up. The tracking shows a delay. I need to understand what's going on. • Customer Service: I'm sorry to hear about this delay. I understand how crucial this workstation is for your project. Let me retrieve your order details so we can go over this together. • A brief pause while they review your order. • Customer Service: I have your order information now. Unfortunately, your delivery has been affected by a strike at our distribution center. This is an unusual occurrence and not typical of the service we aim to provide. It's regrettable that this strike has caused a disruption to your work. • You: I see. That's a difficult situation for me. Is there any estimate on when I can expect delivery? • Customer Service: I understand the urgency of this delay for you. While we know the strike will be resolved, it's impossible to give you a specific timeline at the moment. Please be assured we have plans in place to prioritize your order as soon as the strike ends and deliveries resume. • You: This really sets me back on my schedule. What actions are being taken to address this? • Customer Service: I understand how this affects your plans. To elaborate, the strike is a result of negotiations between the distribution center's management and the workers. It's an unfortunate situation affecting many of our customers, not just your order. We are in constant communication with the distribution center to expedite a resolution. In the meantime, we are exploring alternative delivery options where possible, and we are committed to keeping you updated on any progress. • You: I appreciate the detailed explanation and the efforts to find a solution. It's a challenging situation with the project deadline approaching. • Customer Service: Your situation is indeed challenging, and your concerns are completely valid. We greatly appreciate your patience.
C.3 Disappointment Situation	<p>C.3.1 Group 1: control group (no appreciation, no explanation)</p> <p>After finishing your meal, you receive the bill and a survey form. The form requests feedback on your dining experience at the restaurant. You take a moment to complete it, honestly expressing your disappointment with the flavors and presentation of the dishes, the slow service, and how these aspects did not meet the high expectations set by the restaurant's reputation. You also suggest that the restaurant should align its actual service more closely with what is advertised and promised to customers.</p> <p>After sharing your candid feedback through the survey form, you hand it back to the staff member.</p> <ul style="list-style-type: none"> • You: Here's the feedback form. I've detailed our experience tonight. • The staff member nods as they collect the form, scanning it briefly. • Staff Member: Thank you for taking the time to give us your feedback. • You: May I ask what happens next with this? We had some issues tonight that I think are important. • Staff Member: All feedback is reviewed by our management team. • You: I see. I was hoping for some discussion on the points raised. The experience was quite below what we expected. • Staff Member: We appreciate all customer feedback. Thank you for dining with us this evening.

C.3.2 Group 2: only appreciation	<p>After finishing your meal, you receive the bill and a survey form. The form requests feedback on your dining experience at the restaurant. You take a moment to complete it, honestly expressing your disappointment with the flavors and presentation of the dishes, the slow service, and how these aspects did not meet the high expectations set by the restaurant's reputation. You also suggest that the restaurant should align its actual service more closely with what is advertised and promised to customers.</p> <p>After sharing your candid feedback through the survey form, you hand it back to the staff member.</p> <ul style="list-style-type: none"> • You: I've filled out the feedback form. There are a few points I hope can be looked into. • The staff member takes the form with a gracious nod. • Staff Member: Thank you for sharing your insights with us. • You: Is there a way to know if the points I raised will be addressed? • Staff Member: Absolutely, we treat all customer feedback as valuable. Your suggestions will help us to enhance our service and we are truly grateful for the time you've taken to help us improve. • You: I wasn't expecting that, but thank you. I just hope it leads to a better experience for others. • Staff Member: It's customers like you who help us grow and refine our offerings. We consider your feedback as an important contribution to our improvement. On behalf of our entire team, thank you for assisting us in our commitment to excellence.
C.3.3 Group 3: only explanation, including retrospective and prospective explanations	<p>After finishing your meal, you receive the bill and a survey form. The form requests feedback on your dining experience at the restaurant. You take a moment to complete it, honestly expressing your disappointment with the flavors and presentation of the dishes, the slow service, and how these aspects did not meet the high expectations set by the restaurant's reputation. You also suggest that the restaurant should align its actual service more closely with what is advertised and promised to customers.</p> <p>After sharing your candid feedback through the survey form, you hand it back to the staff member.</p> <ul style="list-style-type: none"> • You: Here's the completed survey. I've noted some areas where my experience didn't quite match up with what I was expecting. • The staff member reviews your survey attentively. • Staff Member: We see that you had some concerns about your meal tonight. Allow me to explain. Recently, we've had some challenges with our usual suppliers which have affected our ingredient quality. This has inadvertently impacted the taste and presentation of our dishes. • You: That explains a lot. But what about the service? It was slower than we anticipated. • Staff Member: Indeed, we've been short-staffed this evening, which is not typical for us. We're actively recruiting to ensure we're fully staffed for future services. We're also implementing a training program to enhance our service speed and efficiency. • You: I appreciate the update. I just wish this was communicated earlier so my expectations could have been managed. • Staff Member: You make a good point. We are looking into better ways to communicate such issues with our patrons to manage expectations more effectively. We're also committed to resolving these issues to ensure that the high standards we set for ourselves are met.
C.3.4 Group 4: appreciation + retrospective and prospective explanation	<p>After finishing your meal, you receive the bill and a survey form. The form requests feedback on your dining experience at the restaurant. You take a moment to complete it, honestly expressing your disappointment with the flavors and presentation of the dishes, the slow service, and how these aspects did not meet the high expectations set by the restaurant's reputation. You also suggest that the restaurant should align its actual service more closely with what is advertised and promised to customers.</p> <p>After sharing your candid feedback through the survey form, you hand it back to the staff member.</p> <ul style="list-style-type: none"> • You: I've completed the survey. I hope my feedback can be useful. • Staff Member: Thank you so much for providing this valuable feedback. We truly appreciate it. • You: Can you tell me how this information will be used? • Staff Member: Certainly. Your input is invaluable to us and acts as a guide for our ongoing improvement efforts. Let me explain our current situation. We've encountered unexpected supplier issues that have affected the quality of ingredients we typically offer, which in turn has impacted the standard of our dishes tonight. • You: I did feel that the dishes didn't quite live up to the reputation. • Staff Member: We understand and apologize that your experience was not on par with the high standards we strive to uphold. In addition to

	<p>resolving our supplier issues, we are also in the process of enhancing our staff training program. This will ensure that both the quality of our food and the efficiency of our service are improved for future visits.</p> <ul style="list-style-type: none"> • You: That's good to know. Timely communication about these changes would have helped manage my expectations. • Staff Member: Absolutely, and we thank you for highlighting this. We are implementing a new communication strategy to keep our guests better informed about any changes that may affect their dining experience. Your feedback tonight is crucial in shaping these improvements, and we are grateful for your contribution. We assure you that the next time you dine with us, the reality will meet your expectations.
C.4 Helplessness Situation	
C.4.1 Group 1: control group (no empathy, no prospective explanation)	<p>At 5 PM, the movers finally answer the phone.</p> <ul style="list-style-type: none"> • You: Hello, I'm calling about the moving service that was supposed to be here at 8 AM today. It's now past 5 PM, and no one has arrived. I've been calling all day, and nobody has picked up the phone. What's going on? • Customer Service: I'm sorry for the wait. I see your booking for this morning. There's been a delay, and unfortunately, we can't make it today. We need to reschedule you for another day. • You: I really needed to move out by 4:30 PM today. My dorm is closing, and I have no other options. Why are they late, and why wasn't I informed sooner? • Customer Service: I don't have the details of the delay right now. We can only offer you a rescheduled time. I apologize for this inconvenience. • You: So, I'm left with all my things and no way to move them out in time? What am I supposed to do? • Customer Service: At this moment, we can't provide immediate help; it's just a rescheduled move. We're sorry for this situation. • You: I guess I have no choice but to wait for the reschedule then. • Customer Service: Yes, we'll contact you with a new time. Sorry again, and thank you for calling.
C.4.2 Group 2: only empathy	<p>At 5 PM, the movers finally answer the phone.</p> <ul style="list-style-type: none"> • You: Hello, I'm calling about the moving service that was supposed to be here at 8 AM today. It's now past 5 PM, and no one has arrived. I've been calling all day, and nobody has picked up the phone. What's going on? • Customer Service: I'm really sorry to hear about this. It must be very stressful to be left waiting, especially with your dorm move-out deadline. We truly understand how important today's move is for you. • You: Yes, it's very stressful. I needed to be out by 4:30 PM. Now I'm stuck and don't know what to do. • Customer Service: I can only imagine how let down you must feel. Missing this deadline isn't what you or we wanted. I'm truly sorry for the distress this has caused you. • You: Can you tell me why they're late? And when can they get here? • Customer Service: I'm afraid I don't have specific information on the cause of this delay. I can't make promises about their arrival without having the details. However, I want you to know we recognize the seriousness of your situation. • You: So what should I do now? The dorm is closing, and I have all my things here. • Customer Service: This is certainly a tough situation, and I wish there was more I could do at this moment to help. Our team should have communicated better, and for that, I am sorry. We feel terrible you're in this position. • You: Alright, thanks for letting me know. • Customer Service: You're welcome. And once again, I am really sorry that we couldn't be there for you as expected.
C.4.3 Group 3: only prospective explanation	<p>At 5 PM, the movers finally answer the phone.</p> <ul style="list-style-type: none"> • You: Hello, I'm calling about the moving service that was supposed to be here at 8 AM today. It's now past 5 PM, and no one has arrived. I've been calling all day, and nobody has picked up the phone. What's going on? • Customer Service: There's been an unexpected delay due to our truck breaking down. It's an unusual situation that we didn't foresee.

tion with wishful (future promising) words	<ul style="list-style-type: none"> You: I really need to move out today. What can I do now? Customer Service: We're arranging for another truck to come to you as soon as one becomes available. We're hopeful to get this resolved soon. You: All my belongings are packed, and I have no way to stay in my dorm. Customer Service: We're looking into the quickest possible options for you. Our aim is to have this sorted out in the shortest time we can manage. You: I wish I had known there was going to be a delay. Customer Service: We're putting measures in place to avoid such disruptions in the future. We're optimistic that we'll have an update for you shortly.
C.4.4 Group 4: empathy + prospective explanation with wishful (future promising) words	<p>At 5 PM, the movers finally answer the phone.</p> <ul style="list-style-type: none"> You: Hello, I'm calling about the moving service that was supposed to be here at 8 AM today. It's now past 5 PM, and no one has arrived. I've been calling all day, and nobody has picked up the phone. What's going on? Customer Service: I'm really sorry that we've kept you waiting, especially with such a critical deadline for moving out of your dorm. It's completely understandable to feel stressed in such a situation. You: Yes, it's quite stressful. My deadline was 4:30 PM, and now I have nowhere to go and no way to move my things. Customer Service: I'm truly sorry for the strain this has caused. We had an unforeseen issue with our truck breaking down today. It's not something we expected, and we regret the inconvenience it's caused you. You: What am I supposed to do now? I needed to be out hours ago. Customer Service: We are working on getting another truck to you as quickly as possible. We hope to resolve this very soon and are actively seeking the fastest solution to assist you. You: I'm just not sure what to do in the meantime. I'm all packed up. Customer Service: I wish we could change how today went and had informed you earlier. We're committed to making this right and will keep you updated with every step we take from here on out. We're optimistic that we'll have a positive update for you shortly, and we're here for you in this tough time. You: Okay, I'll wait for the update then. Thank you. Customer Service: You're welcome, and again, I'm sorry for this disruption. We appreciate your patience and are doing everything we can to help you move as planned.
C.5 Anxiety Situation	
C.5.1 Group 1: control group (no empathy, no prospective explanation with risk-reducing words)	<p>Now, you are calling the bank's customer service...</p> <ul style="list-style-type: none"> Customer Service: Good afternoon. How can I help you today? You: Hi, I just received an alert about a \$2000 charge on my card that I didn't make. I need help with this. Customer Service: Thank you for informing us. Please proceed with disputing the charge through our banking app or by visiting our website. You'll find the option to report unauthorized transactions under the 'Services' tab. You: Is there any more information you can give me? I'm really worried about this. Customer Service: The steps to file a dispute are outlined in the app and on our website. Once filed, we will investigate the matter. You should also monitor your account for any additional unusual activity. You: Okay, but what about my money? And how do I make sure this doesn't happen again? Customer Service: For now, you need to file the dispute so we can begin the investigation process. The app and website have features that allow you to keep track of your account activity. Is there anything else I can assist you with? You: No, that's all for now. Thanks.

	<ul style="list-style-type: none"> • Customer Service: You're welcome. Thank you for calling.
C.5.2 Group 2: only empathy	<p>Now, you are calling the bank's customer service...</p> <ul style="list-style-type: none"> • Customer Service: Good afternoon. How can I help you today? • You: Hi, I just received an alert about a \$2000 charge on my card that I didn't make. I need help with this. • Customer Service: I'm really sorry to hear that you've received this alert and I can understand why you're concerned. It's always unsettling to see charges you don't recognize. • You: Yeah, it's quite worrying. I have no idea how this happened. • Customer Service: Situations like these can be very stressful, and I'm truly sorry that you're going through this. We'll do our best to help you sort this out. • You: So, what can I do now? I'm not sure how to handle this. • Customer Service: I'm here for you. The first step is to file a dispute for the transaction. You can do this through our app or website. While I can't resolve this over the phone, I want to assure you that we take these matters seriously, and we're here to support you through the process. • You: Alright, I'll file the dispute then. Thank you for your help. • Customer Service: Of course, I'm very sorry that you have to deal with this issue, and we appreciate you reaching out to us. Please don't hesitate to call back if you need any more guidance.
C.5.3 Group 3: only prospective explanation with risk-reducing words	<p>Now, you are calling the bank's customer service...</p> <ul style="list-style-type: none"> • Customer Service: Good afternoon. How can I help you today? • You: Hi, I just received an alert about a \$2000 charge on my card that I didn't make. I need help with this. • Customer Service: Oh, I understand that's really concerning. Here's what we're going to do: we've already started looking into this charge to see what went wrong. We're going to take care of this and make sure your money is safe. • You: I'm really worried about my account now. Is my money okay? • Customer Service: Yes, your money is safe. We've got strong checks in place to stop any more unexpected charges. And if there's a charge you didn't make, you won't have to pay for it. • You: How long will it take to get this fixed? • Customer Service: We're moving fast on it. Could you please use our app or website to tell us this wasn't your charge? That helps us fix this quicker. We'll also send you updates so you'll know exactly what's happening. • You: Alright, I'll report it now. Thanks for explaining that to me. • Customer Service: You're welcome. We're here to help, and we're going to sort this out as quickly as we can.
C.5.4 Group 4: empathy + prospective explanation with risk-reducing words	<p>Now, you are calling the bank's customer service...</p> <ul style="list-style-type: none"> • Customer Service: Good afternoon. How can I help you today? • You: Hi, I just received an alert about a \$2000 charge on my card that I didn't make. I need help with this. • Customer Service: I'm really sorry that you're facing this issue, and I completely understand how distressing it must be to see such an unexpected charge. Let's see how we can address this together. • You: It's very worrying. I'm not even sure where this charge has come from. • Customer Service: It's natural to feel concerned in this situation, and I'm truly sorry for the worry this has caused. What we're going to do is look into this transaction immediately to find out what happened. We are here to ensure your account is secure and to take care of this for you. • You: How can I be sure my account won't be affected by this? I'm anxious about the security of my funds. • Customer Service: I assure you, your account safety is our top priority. Our systems are already working to prevent any further unexpected

	<p>activity. We won't let any charge that isn't yours affect your account. You will not be held liable for this \$2000, and we'll make sure your money is protected.</p> <ul style="list-style-type: none"> • You: What do I need to do right now? • Customer Service: The best thing to do immediately is to report this charge as unauthorized using our app or website. This action will initiate our security protocols and help us resolve this quickly. I empathize with the anxiety this must be causing, and we are committed to resolving this issue as swiftly as possible. We'll keep you updated every step of the way. • You: Okay, I'll go ahead and report it now. I appreciate your help and the reassurance. • Customer Service: You're welcome, and I'm sorry again for the inconvenience and stress. We are on top of it and will be in touch with updates. If you have any more concerns or need further assistance, please don't hesitate to reach out.
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APPENDIX D: METHOD SUPPORT

Table D.1: Measurement of Focal Variables in Experimental Design

When measured	Triggered Situation	Measure and purpose	Prompt, items, scaling
A. After negative emotion triggered	1. Anger	a. Measure for external blame attribution	<p>Prompt: Measure the level of your agreement with the following statements:</p> <ul style="list-style-type: none"> • The company was fully responsible for the issue that occurred. • The service failure can be attributed to the company's lack of competence. • The company could have prevented the problem if they had taken the proper actions. • The company was a direct cause of the service failure. <p>Scaling: Likert-type 1–7 (strongly disagree–strongly agree)</p>
		b. Measure for emotion (anger)	<p>Prompt: Please rate the following level of your emotion listed as follows: Anger</p> <p>Scaling: Likert-type 1–7 (not at all angry–strongly angry)</p>
		c. Measure for coping responses: confrontative coping	<p>Prompt: Measure the level of your desire to conduct the following actions:</p> <ul style="list-style-type: none"> • I desire for the company to face consequences for their actions toward me. • I am inclined to express my grievances to the company. • There is a need to take action that disclose the company's unfair practices to customers. • I intend to share my negative experience with others to deter them from engaging with this company. • I plan to utilize social media platforms as a means to alert others. <p>Scaling: Likert-type 1–7 (not at all–strongly desire)</p>
	2. Frustration	a. Measure for situational blame attribution	<p>Prompt: Measure the level of your agreement with the following statements:</p> <ul style="list-style-type: none"> • The delay in delivery was attributable to external factors that were beyond the company's influence. • The firm's delayed delivery was outside their control. • The firm was adversely affected by unforeseen circumstances that resulted in the late delivery. <p>Scaling: Likert-type 1–7 (not at all–strongly agree)</p>
		b. Measure for emotion (frustration)	<p>Prompt: Please rate the following level of your emotion listed as follows: frustration</p> <p>Scaling: Likert-type 1–7 (not at all frustrated–strongly frustrated)</p>
		c. Measure for coping responses: support-seeking coping	<p>Prompt: Please rate your level of agreement with the following statements:</p> <ul style="list-style-type: none"> • Discuss my negative experience with colleagues, friends, or families. • Engage in discussions with online communities to alleviate my negative feelings.

		<ul style="list-style-type: none"> • Communicate with the company to address the problem and work towards an acceptable solution. • Seek out information online to better manage the situation. • Contact consumer rights organizations to seek support in resolving the issue. <p>Scaling: Likert-type 1–7 (you had no desire to engage in the behavior–strong desire to engage in the behavior)</p>
3. Disappointment	a. Measure for expectancy-disconfirmation perception	<p>Prompt: Measure the level of your agreement with the following statements:</p> <ul style="list-style-type: none"> • The actual experience differed from what I expected. • The quality of the provided service did not meet my expectations. • The value I expected to receive did not align with the value that was actually delivered. • Overall, the service experience did not meet the expectations I had formed prior to the service encounter. <p>Scaling: Likert-type 1–7 (strongly disagree–strongly agree)</p>
	b. Measure for emotion (disappointment)	<p>Prompt: Please rate the following level of your emotion listed as follows: disappointment</p> <p>Scaling: Likert-type 1–7 (not at all disappointed–means strongly disappointed)</p>
	c. Measure for coping responses: gap-fulfilling coping	<p>Prompt: Measure the level of your desire to conduct the following actions:</p> <ul style="list-style-type: none"> • Lower my expectations for future experiences to avoid similar disappointments. • Plan to dine at other restaurants to make up for this unsatisfactory experience. <p>Scaling: Likert-type 1–7 (not at all–strongly desire)</p>
4. Helplessness	a. Measure for low coping potential	<p>Prompt: Measure the level of your agreement with the following statements:</p> <p>In the abovementioned situation...</p> <ul style="list-style-type: none"> • The situation was something that I could not cope with. • I could not find a way to alter the situation. • I have few resources or support systems to rely on. • I feel powerless to influence the outcome. • I feel helpless about finding a satisfactory solution. <p>Scaling: Likert-type 1–7 (strongly disagree–strongly helpless)</p>
	b. Measure for emotion (helplessness)	<p>Prompt: Please rate the following level of your emotion listed as follows: helplessness</p> <p>Scaling: Likert-type 1–7 (not at all helpless–strongly desire)</p>
	c. Measure for coping responses: response-support seeking coping	<p>Prompt: Measure the level of your desire to conduct the following actions:</p> <ul style="list-style-type: none"> • Discuss my negative experience with colleagues, friends, or families • Engage in discussions with online communities to alleviate my negative feelings • Communicate with the company to address the problem and work towards an acceptable solution • Seek out information online to better manage the situation • Contact consumer rights organizations to seek support in resolving the issue <p>Scaling: Likert-type 1–7 (not at all–strongly desire)</p>
5. Anxiety	a. Measure for low coping potential	<p>Prompt: Measure the level of your agreement with the following statements:</p> <p>In the abovementioned situation...</p> <ul style="list-style-type: none"> • The situation was something that I could not cope with • I could not find a way to alter the situation • I have few resources or support systems to rely on. • I feel powerless to influence the outcome.

			<ul style="list-style-type: none"> I feel helpless about finding a satisfactory solution. <p>Scaling: Likert-type 1–7 (strongly disagree–strongly agree)</p>
		b. Measure for emotion (anxiety)	<p>Prompt: Please rate the following level of your emotion listed as follows: anxiety</p> <p>Scaling: Likert-type 1–7 (not at all anxious–strongly anxious)</p>
		c. Measure for coping responses: responses-support seeking coping	<p>Prompt: Measure the level of your desire to conduct the following actions:</p> <ul style="list-style-type: none"> Discuss my negative experience with colleagues, friends, or families. Engage in discussions with online communities to alleviate my negative feelings. Communicate with the company to address the problem and work towards an acceptable solution. Seek out information online to better manage the situation. Contact consumer rights organizations to seek support in resolving the issue. <p>Scaling: Likert-type 1–7 (not at all–strongly desire)</p>
B. After being exposed to the firm's recovery actions		a. Measure the de-escalation of anger	<p>Prompt: Please rate your level of anger again after speaking with the customer service representative and hearing the company's response: anger</p> <p>Scaling: Likert-type 1–7 (not at all angry–strongly angry)</p> <p>Prompt: Please rate the extent to which the company's customer service response has successfully reduced your anger.</p> <p>Scaling: Likert-type 1–7 (not at all –strongly agree)</p>
	1. Anger de-escalation	b. Measure the consumers' post-recovery actions: repurchase intention	<p>Prompt: Measure the level of your agreement with the following statements:</p> <ul style="list-style-type: none"> I perceive a high likelihood of repurchasing from this company. I remain the possibility of using this company's services again I maintain my trust in this company's ability to deliver satisfactory service in the future I will continue my business with this company <p>Scaling: Likert-type 1–7 (not at all –strongly agree)</p>
	2. Frustration de-escalation	a. Measure the de-escalation of frustration	<p>Prompt: Please rate your level of anger again after speaking with the customer service representative and hearing the company's response: frustration</p> <p>Scaling: Likert-type 1–7 (not at all frustrated–strongly frustrated)</p> <p>Prompt: Please rate the extent to which the company's customer service response has successfully reduced your frustration.</p> <p>Scaling: Likert-type 1–7 (not at all –strongly agree)</p>
	3. Disappointment de-escalation	b. Measure the consumers' post-recovery actions: repurchase intention	[same as previous]
		a. Measure the de-escalation of disappointment	<p>Prompt: Please rate your level of anger again after speaking with the customer service representative and hearing the company's response: disappointment</p> <p>Scaling: Likert-type 1–7 (not at all disappointed–strongly disappointed)</p> <p>Prompt: Please rate the extent to which the company's customer service response has successfully reduced your disappointment.</p> <p>Scaling: Likert-type 1–7 (not at all –strongly agree)</p>
		b. Measure the consumers' post-recovery actions:	[same as previous]

		repatriation intention	
4. Helplessness de-escalation	a. Measure the de-escalation of helplessness	<p>Prompt: Please rate your level of anger again after speaking with the customer service representative and hearing the company's response: helplessness</p> <p>Scaling: Likert-type 1–7 (not at all helpless—strongly helpless)</p>	
	b. Measure the consumers' post-recovery actions: helplessness	<p>Prompt: Please rate the extent to which the company's customer service response has successfully reduced your helplessness.</p> <p>Scaling: Likert-type 1–7 (not at all –strongly agree)</p>	[same as previous]
5. Anxiety de-escalation	a. Measure the de-escalation of anxiety	<p>Prompt: Please rate your level of anger again after speaking with the customer service representative and hearing the company's response: anxiety</p> <p>Scaling: Likert-type 1–7 (not at all anxious—strongly anxious)</p>	
	b. Measure the consumers' post-recovery actions: anxiety	<p>Prompt: Please rate the extent to which the company's customer service response has successfully reduced your anxiety.</p> <p>Scaling: Likert-type 1–7 (not at all –strongly agree)</p>	[same as previous]

APPENDIX E COMPARATIVE ANALYSIS OF SIX TOOLS

Table E.1. Comparative Analysis of Six Free Online Sentiment Analysis and Response-Generation Tools for Service Recovery

Comparing Tools	Analysis Output	Key Features	Advantages	Limitations
Tool1: EmoPath (https://emopath.app/)	<ul style="list-style-type: none"> Detected multiple negative emotions (Anger 86%, Helplessness 87%, Disappointment 4%, Frustration 2%). Offered context-specific recovery strategies (compensation, empathy, retrospective explanation). 	<ul style="list-style-type: none"> Granular emotion detection and quantification. Automatic provision of targeted recovery approaches (empathy, compensation, proactive resolution). 	<ul style="list-style-type: none"> High analytical depth: Integrates emotional detection with practical service recovery steps. Strong business context integration: Addresses loyalty status, prioritizes actions and suggests follow-up measures. Accurate: Captures key negative sentiments around room quality, cleanliness, and service. 	<ul style="list-style-type: none"> Generates responses one by one; batch processing of multiple complaints may require further development.
Tool 2: FormulaBot	<ul style="list-style-type: none"> Primarily labeled sentences as “Neutral,” identifying only a few as “Negative.” 	<ul style="list-style-type: none"> Basic sentence-level sentiment classification. 	<ul style="list-style-type: none"> Ease of use: Simple input and quick output. Beginner-friendly interface: Minimal setup needed. 	<ul style="list-style-type: none"> Limited emotional granularity: This does not capture the nuanced negative states in the complaint.

				• No structured recovery suggestions or strategic guidance.
Tool 3: Text2Data	<ul style="list-style-type: none"> Overall negative sentiment score (-0.61) with a magnitude of 14.07. Highlighted specific negative keywords (e.g., “defective,” “disappointing”). 	<ul style="list-style-type: none"> Document-level and sentence-level sentiment analysis. Identifies key negative terms with associated scores. 	<ul style="list-style-type: none"> Multiple dimensions: Provides numeric sentiment scores and magnitude. Highlights critical keywords, aiding quick identification of problem areas. 	<ul style="list-style-type: none"> Does not offer direct recommendations for customer service or recovery. Advanced or multilingual features may require a paid plan.
Tool 4: ClientZen	<ul style="list-style-type: none"> Misclassified the complaint text as largely “Positive,” with few negative indicators (e.g., “Sugar 24%”). 	<ul style="list-style-type: none"> Simple positive/negative classification. Lightweight interface. 	<ul style="list-style-type: none"> Straightforward interface: Easy to use for quick checks. Minimal setup required. 	<ul style="list-style-type: none"> Accuracy issues: Fails to capture negative sentiments. Lacks in-depth analysis or actionable insights.
Tool 5: Google Cloud Natural Language	<ul style="list-style-type: none"> Overall sentiment score of -0.735 (negative), with a magnitude of ~13.829. Sentence-level scores for a more precise quantitative breakdown. 	<ul style="list-style-type: none"> Advanced ML-based sentiment analysis. Returns sentiment scores and magnitude. 	<ul style="list-style-type: none"> Mature technology: Well-established and reliable. Highly integrable: It can be easily connected to other Google services or APIs. 	<ul style="list-style-type: none"> Paid plan is required for full functionality. No built-in service recovery recommendations; requires manual interpretation of sentiment scores.
Tool 6: ChatGPT	<ul style="list-style-type: none"> Generates a direct response letter, offering a general apology and basic compensation suggestions. Lacks granular sentiment scoring. 	<ul style="list-style-type: none"> Text generation capabilities for letters, summaries, or conversations. Customizable tone and style. 	<ul style="list-style-type: none"> Coherent and logical: Produces well-structured responses swiftly. Contextual: Mimics human customer service style. 	<ul style="list-style-type: none"> Lacks detailed sentiment metrics: Focuses on generative text rather than in-depth emotional detection. No automated integration of service recovery frameworks or advanced business context.

Tool 1: EmoPath (<https://emopath.app/>)

CALCULATION AND DIAGNOSE

CLEAR

Negative Emotions	
Angry	86.00
Frustration	2.00
Disappointment	4.00
Helplessness	87.00
Anxiety	0.00

Recommendation:

Recovery Strategy of Consumer Helplessness: Empathy + Prospective Explanation with Future-Promising (Certain) Words

Recovery Strategy of Consumer Anger: Active Listening + Compensation

Recovery Strategy of Consumer Disappointment: Appreciation + Retrospective and Prospective Explanation

Recovery Strategy of Consumer Frustration: Empathy + Retrospective Explanation

Dear valued customer,

Thank you for bringing this matter to our attention. We're sorry to hear about the disappointing experience you had at Hotel XYZ in Paris. We understand how frustrating it must have been to arrive at a room that did not meet your expectations based on the photos and descriptions provided on our site.

Your feedback regarding the room, service, Wi-Fi, and cleanliness concerns at the hotel have not gone unnoticed. We take reviews and feedback seriously, as they help us maintain the quality of the properties listed on our platform. We will investigate the issues you raised and take appropriate actions to address them.

We apologize for any inconvenience this has caused you and appreciate your patience as we work to make sure that future guests have a better experience at Hotel XYZ. If you need any further assistance or would like to discuss this matter in more detail, please don't hesitate to reach out to us directly.

Thank you for choosing Tripadvisor, and we hope to restore your trust in our platform for your future travel bookings.

Best regards,
Tripadvisor Customer Service Team

Figure E.1 Screenshot of EmoPath

Tool 2: FormulaBot <https://app.formulabot.com/ai-tools/sentiment-analysis-generator>

Free AI Sentiment Analysis Generator

Upload a file or list of text to generate the sentiment - positive, negative or neutral.

Data	Sentiment
Dear Tripadvisor,	Neutral
I recently booked a stay at Hotel XYZ in Paris through your site, based on the glowing reviews and the amenities listed. Unfortunately, my experience was far from what was promised, and I feel compelled to share my dissatisfaction.	Neutral
Firstly, the room was not as advertised. The photos showed a spacious room with a view, but upon arrival, I was given a tiny, windowless room with peeling wallpaper. When I asked the front desk about this, I was told that "all rooms are similar" and was offered no alternative.	Negative
The service was also subpar. I had to wait over 30 minutes for someone to assist me with check-in, even though there were no other guests in line. Additionally, the hotel's advertised "free Wi-Fi" was anything but reliable. I couldn't get a connection for most of my stay, and when I asked for help, I was brushed off.	Neutral
Finally, the cleanliness of the hotel was concerning. The bathroom had mold in the shower, and the linens appeared to have not been changed properly. This was not the level of cleanliness I expected, especially given the higher price I paid for this stay.	Negative
I hope Tripadvisor will look into this property and ensure that future guests have a better experience. I'm extremely disappointed, and will be reconsidering how I book through your platform moving forward.	Neutral

Figure E.2 Screenshot of FormulaBot

Tool 3: Text2Data <https://text2data.com/Demo>

Dear Tripadvisor, I recently booked a stay at Hotel XYZ in Paris through your site, based on the glowing reviews and the amenities listed. Unfortunately, my experience was far from what was promised, and I feel compelled to share my dissatisfaction. Firstly, the room was not as advertised. The photos showed a spacious room with a view, but upon arrival, I was given a tiny, windowless room with peeling wallpaper. When I asked the front desk about this, I was told that "all rooms are similar" and was offered no alternative. The service was also subpar. I had to wait over 30 minutes for someone to assist me with check-in, even though there were no other guests in line. Additionally, the hotel's advertised "free Wi-Fi" was anything but reliable. I couldn't get a connection for most of my stay, and when I asked for help, I was brushed off. Finally, the cleanliness of the hotel was concerning. The bathroom had mold in the shower, and the linens appeared to have not been changed properly. This was not the level of cleanliness I expected, especially given the higher price I paid for this stay. I hope Tripadvisor will look into this property and ensure that future purchases of a larger one for bedroom and it arrived with a busted screen, so I ordered a replacement and got it on Friday. Took it out and set it up. NO picture - only static with a BLACK screen. It was hooked to direct TV so we knew there was a problem when there was no picture and only static. It wouldn't respond to remote buttons or the buttons on the TV itself - definitely a problem. I called LG customer service and we performed a couple of their tests recommendations and finally got voice sound but still no picture, then we lost the voice again. The Customer Service lady told me this LG was defective. VERY disappointing to say the least - to receive not one but 2 broke/defective TVs. I'm ready to get my money back and try another brand. And I really do like my smaller LG so this is even more upsetting!

cleanliness of the hotel there was no picture offered no alternative booked a stay broke defective tv's lost the voice glowing reviews amenities listed expected static spacious least glowing defective disappointing

This document is: negative (-0.61) Magnitude: 14.07

Subjectivity: subjective



Score Range: -1 -0.25 +0.25 +1

Figure E.3 Screenshot of Text2Data

Tool 4: ClientZen <https://www.clientzen.io/sentiment-analysis-tool-results>

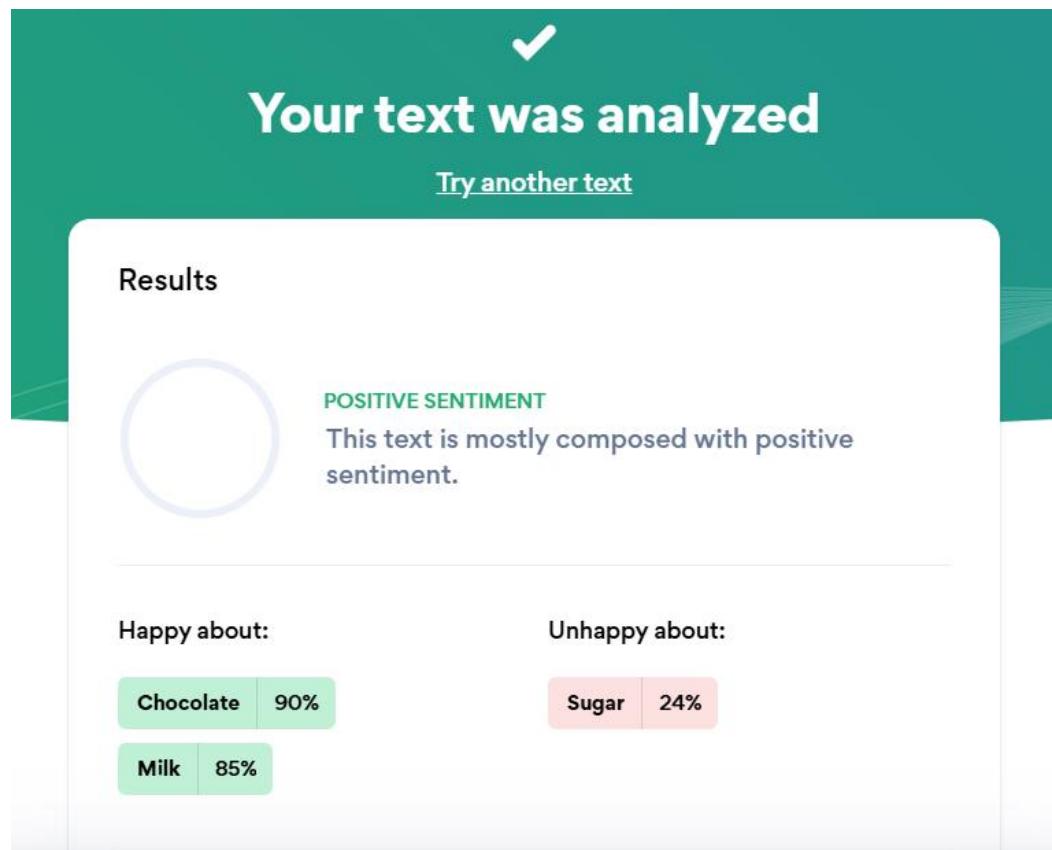


Figure E.4 Screenshot of ClientZen

Tool 5: Google Cloud Natural Language <https://cloud.google.com/natural-language>

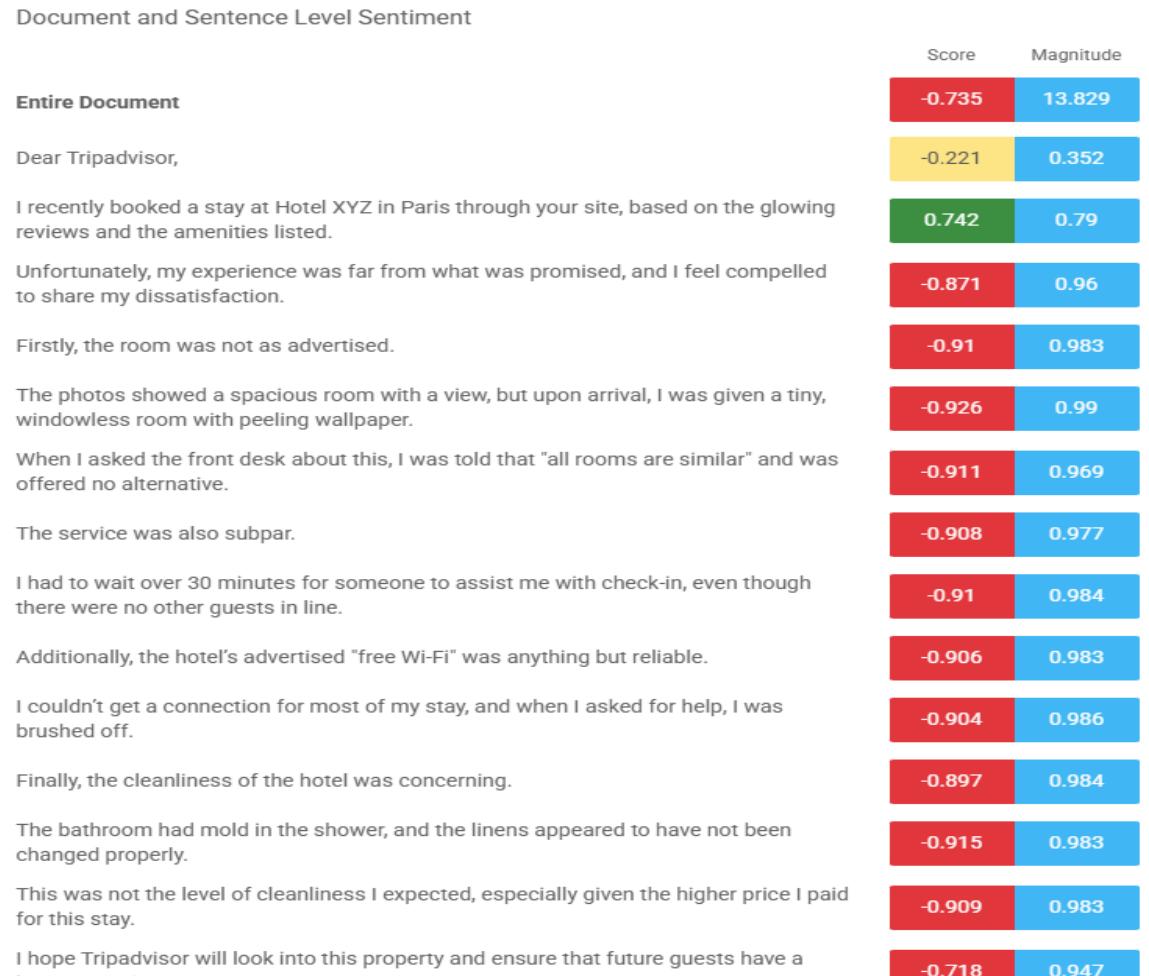


Figure E.5 Screenshot of Google Cloud Natural Language

Tool 6: ChatGpt

Dear [Your Name],

Thank you for taking the time to provide feedback about your recent stay at Hotel XYZ in Paris. We sincerely apologize for the issues you encountered, and we understand your frustration.

We strive to ensure that all property listings on our platform are accurate and reflective of the guest experience. Your comments have been forwarded to our quality assurance team to review the discrepancies between the advertised amenities and your experience. Additionally, we will communicate your concerns directly with the hotel management to address the problems with the room condition, service quality, and cleanliness.

To help resolve this matter, we would like to offer you a coupon for a future booking through our platform, hoping to provide you with a better experience next time. Furthermore, if you haven't done so already, we encourage you to post a detailed review on our website. Sharing your experience publicly helps others make informed decisions and prompts hotels to maintain high standards.

Please contact our customer service team at your earliest convenience to discuss this further. We value your business and are committed to ensuring a more positive experience in the future.

Thank you for choosing Tripadvisor for your travel needs.

Sincerely,

[Customer Service Team Name] Tripadvisor

Figure E.6 Screenshot of ChatGpt

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